Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
TerreStar Corporation Request for Relief of Certain 1.4 GHz Construction Requirements	)	WT Docket No. 16-290
	)	
	)	

COMMENTS GE HEALTHCARE

GE Healthcare ("GEHC") hereby submits these comments in response to the *Public Notice* issued by the Federal Communications Commission's ("FCC" or Commission) Wireless Telecommunications Bureau in the above-captioned proceeding.[1] The *Public Notice* seeks comment on TerreStar Corporation's ("TerreStar") request for a 36-month waiver of the substantial service requirements for commercial wireless licenses in the 1.4 GHz band.[2] TerreStar asserts that granting this request will help support the development of wireless medical telemetry on its licensed spectrum and expand wireless medical telemetry capacity at 1.4 GHz.[3] As explained below, the Commission should grant TerreStar's request because it will help meet the nation's growing demand for spectrum to support safety-of-life wireless medical telemetry operations, such heart rate and oxygen saturation monitoring.[4]

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[1] *Wireless Telecommunications Bureau Seeks Comment Regarding TerreStar Corporation's Request for Relief of Certain 1.4 GHz Construction Requirements*, Public Notice, DA 16-1029 (WTB, rel. Sept. 14, 2016) ("*Public Notice*").

[2] *See id*.; TerreStar, Request for Temporary Waiver of Substantial Service Requirements, WT Docket No. 16-290 (filed Sept. 15, 2016) ("TerreStar Request"). TerreStar's current substantial service deadline is April 23, 2017. TerreStar Request at 5.

[3] *See id*. at 1.

[4] *See* Letter from Matt Pekarske, Principal Engineer – Wireless, GEHC, to Marlene H. Dortch, Secretary, FCC (dated July 22, 2016), *attached to* TerreStar Request.

1. There is a Growing Need for Additional Wireless Medical Telemetry Spectrum.

The FCC has long recognized "the importance of the Wireless Medical Telemetry Service ("WMTS") to patient care" and the critical need to protect its "safety-of-life" operations from harmful interference. [5] WMTS has played a transformative role in healthcare by empowering healthcare providers to remotely monitor their patients' physiological data.[6] For example, WMTS provides patients "significant benefits . . . in terms of mobility and comfort" and offers both patients and healthcare providers a "significant tool in reducing healthcare costs."[7]

Hospitals and other healthcare facilities routinely use WMTS spectrum to monitor patient data in real-time and detect life-threatening events (*e.g.*, cardiac arrhymias and apneas).[8] In fact, the American Society for Healthcare Engineering of the American Hospital Association ("ASHE") estimates that WMTS systems are deployed in over 2,700 unique locations.[9] And the number of locations that use WMTS is expected to increase significantly as hospitals seek to better address the problems raised by an aging U.S. patient population and increased patient

[5] *See, e.g.*, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567 ¶ 275 (2014).

[6] *See, e.g.*, GEHC Comments, ET Docket No. 14-165, GN Docket No. 12-268, at 3-4 (Feb. 4, 2015) (GEHC Feb. 4, 2015 Comments).

[7] *Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service*, Order, 16 FCC Rcd 4543 ¶ 2 (2001).

[8] *See, e.g.*, GEHC Feb. 4, 2015 Comments at 3-4; GEHC Comments, GN Docket No. 12-268, at 1 (Jan. 25, 2013).

[9] ASHE is the FCC-designated WMTS frequency coordinator. *See* GEHC Feb. 4, 2015 Comments at 3; *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357 ¶ 210 (2012).

acuities.[10] There is thus a growing demand for WMTS spectrum to support remote patient monitoring.

2. Granting TerreStar's Request Would Help Address the Growing Need for WMTS Spectrum.

The Commission can help address this growing need for additional WMTS spectrum by granting TerreStar's request. TerreStar plans to use its licensed spectrum to support wireless medical telemetry operations in the 1390-1392, 1392-1395, and 1432-1435 MHz bands.[11] This additional spectrum would increase the capacity for such 1.4 GHz operations by approximately 67 percent.[12] The spectrum is also well situated, as it is adjacent to two bands that are already used for WMTS.[13] In particular, the 1392-1395 MHz band could be used for innovative wireless medical telemetry applications outside of healthcare facilities.[14] And the 1432-1435 MHz band would fit neatly into the current framework for WMTS under Part 95 of the Commission's rules.[15]

Moreover, TerreStar's planned registration process and frequency coordination database (which is similar to the existing WMTS database) could make the expansion of wireless medical telemetry systems into its spectrum relatively seamless for healthcare providers.[16] However, this

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[10] *See, e.g.*, GEHC Feb. 4, 2015 Comments at 3; Research and Markets, Cardiac Monitoring And Diagnostic Devices - Global Trends, Estimates and Forecasts, 2012-2018 (June 2014), *available at* http://www.researchandmarkets.com/reports/2882672/cardiac-monitoring-and-diagnosticdevices.

[11] *See, e.g.*, TerreStar Request at ii.

[12] *See, e.g., id.* at 1-2.

[13] The 1395-1400 and 1427-1431.5 MHz bands are currently dedicated to WMTS. *See, e.g., id.* at 8.

[14] It may be necessary to limit use of this spectrum within hospitals to protect WMTS systems operating above 1395 MHz from harmful interference. *See, e.g., id.* at 16.

[15] *See, e.g., id.* at 2. GE Healthcare believes that ultimately at least the 1432-1435 MHz portion of the TerreStar spectrum should be folded into the existing WMTS rules under Part 95 via a separate rulemaking proceeding.

[16] *See, e.g., id.* at 17-19.

will depend on factors that have yet to be determined. For instance, the rates TerreStar charges healthcare providers for access to the spectrum must be reasonable. Lease durations will need to be long enough to allow healthcare providers to make long-term, strategic decisions about how they invest in telemetry technology. And TerreStar should not be allowed to enable a *de facto* monopoly in a particular geographic area by leasing spectrum that could be used by a number of healthcare providers to only one equipment manufacturer.[17]

We agree with TerreStar that its plans to support wireless medical telemetry would not be feasible without a temporary waiver of its substantial service requirements.[18] It could take up to three years for TerreStar, equipment manufacturers, and healthcare providers to develop, test, and deploy wireless medical telemetry systems that can viably operate on TerreStar's 1.4 GHz spectrum.[19] The FCC may also need time to develop technical rules to ensure that existing and future wireless medical telemetry systems remain protected from harmful interference, which it should do before allowing TerreStar's spectrum to be used for wireless medical telemetry. These rules should clarify how parties conducting wireless medical telemetry operations in close geographic proximity to each other should act to avoid harmful interference and, at a minimum, clarify whether in this case the FCC's typical approach of affording authorized spectrum users "first-in-time" interference protection rights should be re-examined.[20]

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[17] *See, e.g., id.* at 17 (stating that TerreStar expects to enter into leasing arrangements with "a mix of health care providers, health care facilities, and wireless medical telemetry equipment manufacturers").

[18] *See, e.g., id.* at 2-3.

[19] *See, e.g., id.* at 27.

[20] *Compare Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band; et al.*, Report and Order and Second Report and Order, 25 FCC Rcd 11710 ¶186 (2010) ("[A]s is typically the case when co-primary services coordinate, we find a first-in, first-protected coordination approach is appropriate."), *with World Data PR Inc.; et al.*, Memorandum Opinion and Order, 24 FCC Rcd 14648 ¶¶ 14-15 (WTB, 2009) ("[A]ny suggestion of a

3. Channel 37 Remains Critical to WMTS.

Finally, our support for TerreStar's request should in no way be interpreted to suggest that Channel 37's importance to WMTS has diminished. To the contrary, the 1.4 GHz band has the potential to further supplement, rather than replace, Channel 37 as a home for WMTS systems. Even if the FCC were to grant TerreStar's request and additional spectrum became usable for wireless medical telemetry in the 1.4 GHz band, Channel 37 would remain the only band viably available for fetal and heart monitoring.

For the foregoing reasons, the FCC should grant TerreStar's request for a 36-month waiver of the FCC's substantial service requirements for commercial wireless licenses in the 1.4 GHz band.

Respectfully submitted,

/s/ Ari Q. Fitzgerald

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October 4, 2016

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first-in-time priority among terrestrial licensees in the 3650 MHz band would be incorrect . . . [instead], licensees will have a mutual obligation to cooperate and avoid harmful interference to each other.").